

Patent Claims:

1. Actuation unit for a hydraulic vehicle brake system, comprising a pneumatic brake booster (1) and a master brake cylinder (2) connected downstream of the pneumatic brake booster (1), with the pneumatic brake booster (1), in a booster housing (3), having a first movable wall (5) and a second movable wall (6) being in a force-transmitting connection to a piston of the master brake cylinder (2), with the movable walls delimiting a working chamber (11) which can be evacuated or aerated by means of a control group (4) that is composed of a vacuum sealing seat (13), an atmospheric sealing seat (14), and a valve member (15) cooperating with the sealing seats (13, 14),  
c h a r a c t e r i z e d in that the vacuum sealing seat (13) is in operative engagement with the booster housing (3), while the atmospheric sealing seat (14) is in operative engagement with the first movable wall (5).
2. Actuation unit as claimed in claim 1,  
c h a r a c t e r i z e d in that the frictional connection between the vacuum sealing seat (13) and the booster housing (3) is established by means comprising at least one stop (21) and an electrically controllable stroke actuator (7).
3. Actuation unit as claimed in claim 1 or 2,  
c h a r a c t e r i z e d in that the frictional connection between the atmospheric sealing seat (14)

and the first movable wall (5) is established by a fixed coupling or a direct mechanical contact of the mentioned components.

4. Actuation unit as claimed in any one of claims 1 to 3, characterized in that an additional atmospheric sealing seat (24) is provided which interacts with an additional valve member (25) and becomes active when the control group (4) is quickly actuated.
5. Actuation unit as claimed in claim 4, characterized in that the frictional connection between the atmospheric sealing seat (14) and the first movable wall (5) occurs by way of the additional sealing seat (24).
6. Actuation unit as claimed in any one of claims 1 to 5, characterized in that the movement of the vacuum sealing seat (13) is coupled to the movement of an armature (17) of the electrically controllable stroke actuator (7) which, in the event of an actuation stroke, closes the vacuum sealing seat (13) by abutment on the valve member (15) and opens the atmospheric sealing seat (14) by lifting the valve member (15).
7. Actuation unit as claimed in claim 6, characterized in that the electrically controllable stroke actuator (7) is arranged in an immovable way relative to the booster housing (3).

8. Actuation unit as claimed in any one of claims 1 to 5,  
c h a r a c t e r i z e d in that the movement of at  
least one atmospheric sealing seat (14, 24) is coupled  
to the movement of the first movable wall (5).
9. Actuation unit as claimed in any one of claims 1 to 8,  
c h a r a c t e r i z e d in that a brake pedal  
travel simulation device (9) is provided, comprising  
resilient and/or damping and/or frictional elements.
10. Actuation unit as claimed in claim 9,  
c h a r a c t e r i z e d in that the brake pedal  
travel simulation device (9) is accommodated in a  
cylindrical component (10) which is connected to the  
first movable wall (5) and carries one of the  
atmospheric sealing seats (14, 24).
11. Actuation unit as claimed in any one of the preceding  
claims,  
c h a r a c t e r i z e d in that a pneumatic vacuum  
chamber (12) is provided in the booster housing (3),  
extending into the area of the control group (4) and  
being connectible to the working chamber (11).
12. Actuation unit as claimed in any one of the preceding  
claims,  
c h a r a c t e r i z e d in that pneumatic sealants  
are provided between the booster housing (3) and the  
movable parts of the control group (4) or between  
these, the sealants being configured as pleated bellows  
(30) or hose collars.

13. Actuation unit as claimed in claim 9,  
c h a r a c t e r i z e d in that the resilient  
and/or damping and/or frictional elements (29) are  
arranged between the first movable wall (5) and a  
piston rod (8) actuating the control group (4) in terms  
of force transmission.
14. Actuation unit as claimed in any one of the preceding  
claims,  
c h a r a c t e r i z e d in that at least two  
tensile-force transmitting elements (18) are provided  
which extend through the booster housing (3) and are  
used to attach the master brake cylinder (2) to the  
booster housing (3), on the one hand, and to mount the  
actuation unit on a splashboard of the vehicle, on the  
other hand.
15. Actuation unit as claimed in any one of the preceding  
claims,  
c h a r a c t e r i z e d in that there is provision  
of a disengaging sleeve (19) which is slidingly  
arranged in the booster housing (3) in a pneumatically  
seal-tight manner and is connected to the first movable  
wall (5) by way of a rolling diaphragm (20).
16. Actuation unit as claimed in any one of the preceding  
claims,  
c h a r a c t e r i z e d in that the brake pedal  
travel simulation device (9) is disabled in terms of  
effect.

17. Actuation unit as claimed in claim 16,  
c h a r a c t e r i z e d in that the brake pedal  
travel simulation device (9) is disabled in terms of  
effect depending on the travel of the first movable  
wall (5) relative to the booster housing (3).